Vermont...

Keeping In Touch

EPA New England

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Lake Champlain, Burlington, VT. Photo: Erik Beck

An Open Letter to the People of Vermont

As the new regional administrator of EPA's New England Office, I am honored to be leading the region's efforts to improve our environment and protect public health.

Vermont, like the rest of New England, faces many challenges in its efforts to achieve a healthy environment. EPA's job is to work with state and local governments, businesses, institutions, environmental groups and citizens to meet these challenges. I am proud of the progress we have made, largely with the help of our partners in Vermont. This newsletter, *Keeping in Touch*, highlights some of our most successful collaborative projects, among them:

- Curbing Polluted Runoff from Farms: EPA and the Vermont Department of Environmental Conservation (DEC) recently completed a seven-year study showing that significant pollution reductions can be achieved with improved fencing and other agricultural best management practices. The study focused on three watersheds. Farmers in two of the watersheds fenced off their streams, while farmers in the third did not. Phosphorus, nitrogen and sediment levels in the Samsoville Brook - the watershed with the most protection - dropped by twelve to thirty-four percent, while bacteria counts fell by 30 to 40 percent. The results were achieved in large part by simply fencing livestock away from streams and by letting stream banks heal with natural vegetation.
- Protecting Lake Champlain: Lake Champlain is nationally recognized as a highly valued resource, but it is also under siege from pollution. The Lake Champlain Basin Program, an EPA funded collaboration of agencies, communities, and private organizations, has twenty year reduction targets for reducing phosphorus discharges into the lake. By the end of this year, the program expects it will have reduced phosphorus loadings by thirty eight tons a year - more than double what the program was looking to achieve in the first five years.
- Pollution Prevention: Environmental assistance and pollution prevention are integral components of our work in Vermont. Among other activities, we held workshops in five Vermont towns dealing with preventing pollution from underground storage tanks and launched a voluntary hospital project that led three Vermont hospitals to reduce their usage of mercury-containing products. Our school clean-out project helped eighty-three Vermont schools eliminate 600 pounds of mercury-containing waste and over 1,600 pounds of hazardous lab chemicals.

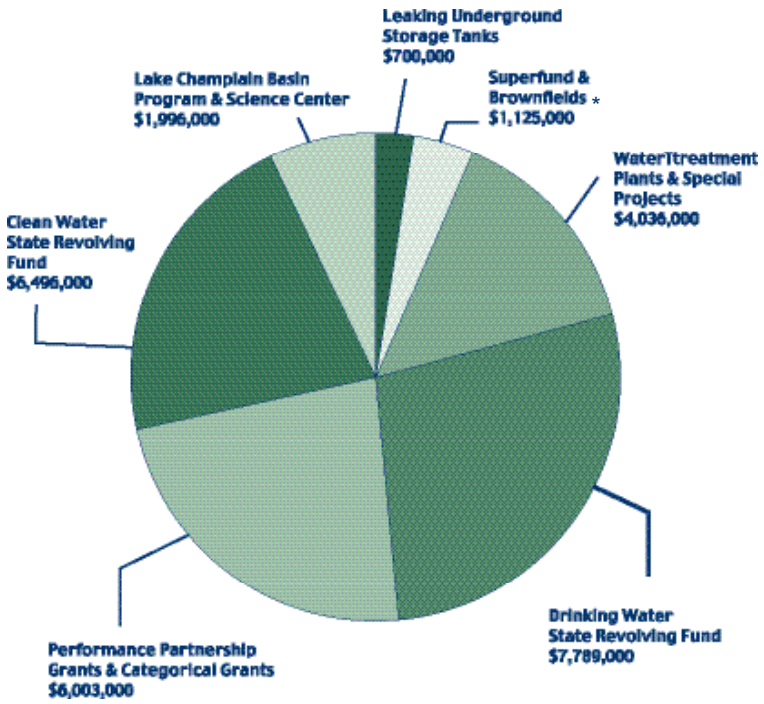
These are just a few of the many accomplishments in Vermont, and we look forward to more successes in the future. EPA New England provides more than $28 million a year to Vermont to help preserve Vermont's clean and healthy environment. We will continue this support while striving to be more accessible, innovative and responsive as we work together to improve public health and the environment in Vermont.

Sincerely,

Robert W. Varney
Regional Administrator

In This Issue

EPA Federal Fiscal Year 2001 Funds in Vermont



* Grants to the State of Vermont. Does not include site cleanup funds.
All figures rounded to the nearest thousand.

First Phosphorus Reduction Goal Exceeded

In 2001, Vermont, New York, and Quebec reached a milestone in reducing phosphorous inputs to Lake Champlain. According to a report prepared by the Lake Champlain Basin Program's Technical Advisory Committee and Phosphorus Reduction Team, phosphorus inputs to the lake have been reduced by about 39 metric tons a year relative to 1995. This far exceeds the five-year interim reduction goal of 15.8 metric tons per year. These reductions have been achieved by upgrades and modifications to wastewater treatment plants, and by implementation of agricultural best management practices.

Ron Manfredonia Retires

Ronald Manfredonia, EPA New England's Surface Water Quality chief, has retired after 30 years at EPA. Ron dedicated a substantial portion of his time throughout the years working on Lake Champlain issues. Among other positions, Ron chaired the Lake Champlain Management Conference from its inception in 1990 through 1996, and oversaw the development of *Opportunities for Action*, the management plan for Lake Champlain. He played a pivotal role in negotiation of the bi-state phosphorus reduction agreement, which continues to drive lake management today. He was known for being straight forward and committed. He was also infamous for his golfing and shopping prowess. Ron worked hard to minimize bureaucracy and make sure that this program really benefitted the lake. Ron's expertise, experience, and enthusiasm for Lake Champlain and the Basin Program will very much be missed.

Vermont DEC Receives Grant for Pollution Prevention

EPA New England recently awarded a $75,000 grant to the Vermont DEC's pollution prevention program under its Pollution Prevention Incentives for the States (PPIS) grants program. The work funded by this grant will take place from October 2001 - September 2002. The funding will support the following initiatives:(1) Community-based biosolids toxics use reduction project; (2) Vermont Small Business Development Center partnership support; (3) Small business pollution prevention incentive grants program; and (4) Mercury education and reduction initiatives with dental offices.

The community-based biosolids toxics use reduction project will involve assistance to two Vermont communities to reduce toxics in municipal biosolids through pollution prevention assistance, outreach and education to businesses, institutions and the general public. Each community will develop its own approaches and strategies, with assistance provided by the Vermont DEC. It is hoped that these projects will serve as models of community involvement, that can be shared with other communities in the state to protect their natural resources.

The PPIS grant also provides support to the Vermont Small Business Development Center (SBDC) for collaborative projects that provide pollution prevention assistance to small businesses. Activities include administration of the Vermont Business Environmental Partnership Program that provides assistance to businesses in achieving pollution prevention and compliance standards (both core and elective standards) in order to achieve recognition as Environmental Partners or Leaders. The SBDC will also provide pollution prevention opportunity assessments through the Community-based Biosolids Toxics Use Reduction Project. SBDC will also assist in conducting regional workshops and pollution prevention technical assistance to the metal fabrication sector in the coming year.

A pollution prevention grants program will support pollution prevention projects at two to three small businesses. Criteria considered in awarding grants include degree of innovation and applicability and transferability to other small businesses. The VT DEC will also be conducting mercury education and reduction initiatives with dental offices, in collaboration with the Vermont State Dental Society. This will include a survey of Vermont dentists on mercury amalgam use and employment of best management practices, as well as development of regulatory guidance and procedures to prevent and control mercury releases.

For more information on Pollution Prevention efforts at EPA New England, visit the website at http://www.epa.gov/region1/compliance/assist/p2page.html. Or contact Kira Jacobs of EPA NE at (617) 918-1817.

A recently completed seven year VT DEC study funded by EPA's nonpoint source program strengthens the case for keeping cows out of streams. The study looked at three adjacent small watersheds draining into the Missisquoi

Fencing Cows Out of Streams Reduces Phosphorus and Bacteria in Waterways

River in northern Vermont. Farmers in two of the watersheds fenced their streams, while farmers in the third (the control watershed) did not. The results have been very encouraging. Phosphorus, nitrogen and sediment levels in the Samsoville Brook (the watershed with the most riparian restoration) were reduced by 12 to 34% and bacteria counts dropped by 30 to 40%. Phosphorus, nitrogen, and sediment export from the watershed declined by 30 to 50%. The stream protection kept almost a ton of phosphorus, 2 tons of nitrogen, and 126 tons of sediment out of the water each year. These results were achieved in most cases by simply fencing livestock away from streams and letting the stream banks and riparian zones heal with natural vegetation. In addition to the chemical measurements, biologists from VT DEC surveyed the streams each year for fish and macroinvertebrates, the insect larvae and other creatures that live in the stream bed and are an important food source for fish. In the sections where cows had been fenced out and streambanks protected, the streams became narrower and deeper and summer water temperatures dropped slightly. These changes, plus the reductions in nutrient and sediment loads to the streams, led to improvement in the macroinvertebrate community in some locations. No major changes were observed in the fish community but it is probably too soon to expect such changes, according to Don Meals, project manager. For more information or to obtain a copy of a detailed final report on this project, contact Rick Hopkins at VT DEC (802-241-3769) or Eric Perkins at EPA (contact info at the end of newsletter).

Photo by Steve Delany

The Vermont Biodiversity Project

Loss of biodiversity is real. EPA's Science Advisory Board has identified the loss of biodiversity as one of the most important environmental issues in our country. In Vermont, a team of scientists and land resource experts has developed a highly effective methodology for protecting Vermont's biological diversity. The work is being done by the Vermont Biodiversity Project Team (established in 1996), a collaborative effort of The Nature Conservancy of Vermont, the Vermont Agency of Natural Resources, the Environmental Protection Agency, the Orton Family Foundation, the Vermont Land Trust, the University of Vermont, Middlebury College, the US Fish and Wildlife Service, and the US Forest Service.

Photo by Steve Delany

Loss of biodiversity at the ecosystem level occurs when distinct habitats, species assemblages, and natural processes are diminished or degraded in quality. In the United States, losses of all kinds of ecosystems have been most pronounced in the South, Northeast, Midwest, and California. *(Noss F. Reed, LaRoe Edward T., Scott J. Micheal, Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation).*

In Vermont, scientists have been gathering information on biodiversity since 1983, when the Vermont Natural Heritage Program was initiated within The Nature Conservancy's Eastern Regional Office. In the 18 years since its inception, the program has gathered information on rare species and natural communities mostly through field inventory. However, the inventory is not complete, nor can it be expected to be complete within the next 20 or even 50 years – a thorough field inventory of the state would be a mammoth task.

Yet the conservation of biodiversity in Vermont (and throughout the world) is an urgent matter, and cannot await thorough inventory. Thus, as we continue the inventory work, we must simultaneously develop tools to assess biodiversity in a more rapid manner, so that good conservation planning can take place. The needs in Vermont are as follows:

1. To compile existing data on the distribution of the elements of biodiversity: plants, animals, and natural communities;

2. To develop surrogate ("coarse-filter") approaches so that we can predict the occurrence of areas of high biodiversity potential in the absence of field data;

3. To use field data and surrogate approaches to prioritize lands and waters for conservation.

So far, existing data has been used to delineate a set of Biological Diversity Resource Areas. The inventory data that were used include the database of the Nongame and Natural Heritage Program and a new classification and delineation of significant aquatic communities (developed especially for this project). Since the inventory data were not complete for all organisms and natural communities of interest, landscape diversity and natural community diversity were used as "coarse filters" to capture biodiversity that is poorly known. Landscape diversity can be assessed through existing GIS data layers, but natural community diversity itself is poorly understood.

For poorly understood areas, the team will conduct inventories that combine remote sensing techniques and ground-based surveys. Using existing satellite imagery, current land-cover maps, and digital elevation models, each conservation area will be examined for likely occurrences of uncommon natural communities that have not been previously mapped by statewide mapping projects. Aerial videography, color infrared photographs, helicopter overflights, and ground surveys will be conducted to verify the occurrence and map the extent of these natural communities. Community occurrences will be ranked using criteria being developed by The Nature Conservancy for its eco-regional planning process. This assessment will produce a list, for each biophysical region, of natural community types that were captured in the delineation of the priority conservation areas, and conversely, a list of natural community types that were missed.

The next step is to verify the representation of natural communities in the system of priority conservation areas and to revise the initial design if necessary. Congratulations to the Nature Conservancy, Vermont Chapter, the University of Vermont and all of the partners for their outstanding work.

For more information visit the VBP web site at http://snr.uvm.edu/sal/vbp/ or call Elizabeth Thompson of the Nature Conservancy, Vermont Chapter at 802-656-9571.

Lake Champlain Roundup 2001

The Lake Champlain Basin Program (LCBP) has seen an even busier year than usual. In addition to the usual work on monitoring the health and water chemistry of the lake, researching emerging threats like toxic blue-green algae, funding improvement projects in the watershed, educating the public about how watersheds work, and helping to coordinate the efforts of various federal, state and provincial agencies to enhance and protect the watershed's environment, the Basin Program has been involved with some special projects. The staff are devoting large amounts of time and energy to revising "Opportunities for Action," the management plan for the Lake and Basin. Under the direction of the Steering Committee and in concert with other LCBP committees, the staff are working on updating many items in the plan to reflect the progress that has been made and the challenges that still lie ahead. Currently the schedule for the revised plan calls for releasing a draft for public comment in early Autumn. The Basin Program hopes to receive extensive comments from the public after this release, will be paying close attention to the information provided, and will incorporate the sentiment of the basin's citizenry into the final revised document.

Since the devastating fire in January of 1998 that extensively damaged the Basin Program's home on Grand Isle, the staff had been working out of temporary quarters in Colchester (very kindly provided by St. Michaels College). In February, the staff were fortunate enough to move back in to the rebuilt Gordon Center house in Grand Isle. The Vermont Department of Fish and Wildlife, the owners of the building, reconstructed it and have leased the second floor to the Basin Program at a very favorable rate.

As described in last year's newsletter (available on the web at http://www.epa.gov/region1/eco/vermont/vermontnews.pdf), the Total Maximum Daily Load project for Lake Champlain is underway. This effort on both US sides of the lake is a planning process to reduce the amount of phosphorus reaching Lake Champlain. Eric Perkins' article in this issue provides more details. You can also see Vermont's website on this issue at: http://www.anr.state.vt.us/dec/waterq/lakesTMDL.htm

On July 2, the Lake Champlain Science Center, a strong partner of EPA and the Lake Champlain Basin Program, officially broke ground at the site of their new building on the Burlington waterfront. This building will replace the current structure that has housed the Science Center the last few years, and will be at the same location. The new facility will be tightly integrated with the new University of Vermont Ecosystem Laboratory, which will facilitate increased interaction between researchers, interpreters, and the public.

Basin Harbor, VT. Photo: Erik Beck

On June 30, the Valcour Bay Research Project and the Lake Champlain Maritime Museum, with support from EPA, the Lake Champlain Basin Program, and other organizations, raised an 18th Century ship cannon from the floor of Valcour Bay. This cannon was involved in the battle of Valcour Island, which occurred during the Revolutionary War on October 11, 1776. This Revolutionary War artifact will be conserved by the Lake Champlain Maritime Museum and displayed at their facility in Basin Harbor for awhile.

The Lake Champlain Basin Program will miss the involvement of John Titchner and Jean Hubert, who have recently retired. John was the USDA NRCS State Conservationist for the State of Vermont, a position he held for many years. He devoted a great deal of time to the Lake Champlain Basin Program, first as a founding member of the Lake Champlain Management Conference, and later as the USDA representative to the Steering Commitee. His expertise and wit will be missed. Jean Hubert was the coordinator and principle assistant on Lake Champlain for the director of Québec's regional office of the environmental ministry (Analyste-conseil, Ministère de l´ Environnement, Direction Régionale de la Montérégie). He served on the Executive Committee, and frequently on the Steering Committee as well. He was instrumental to Quebec's involvement in drafting the Missisquoi Bay agreement with Vermont, and to Quebec's participation with the Memorandum of Understanding with Vermont and New York. His knowledge of Lake Champlain issues, and how they relate to the people and geography of Quebec, will be missed.

The Federal agencies involved with Lake Champlain have been working to create a Memorandum of Understanding to help guide their efforts on Lake Champlain, and to better work with the other partners of the Lake Champlain Basin Program. While many of these agencies currently are signatories to the Lake Champlain Management Plan "Opportunities for Action," several are not. This new federal MOU is intended to facilitate coordination of federal agencies to better implement the Lake Champlain Management Plan, and to better work on the issues and policy directions conceived by the Basin Program's Steering Committee (which has broad representation from citizens, representatives of

(*Lake Champlain Roundup 2001, continued*)

state and provincial governments, and three federal agencies). In July 2001, the last signature to this federal MOU was affixed and the document was completed.

During the Summer of 2000, the University of Vermont, with funding from the Lake Champlain Basin Program, Vermont ANR, and EPA, and with assistance from other agencies and universities, began an investigation of blue-green algae blooms in Lake Champlain. Blue-green algae, more properly known as cyanobacteria, aren't true algae; they are a set of bacteria species that resemble algae because of the growth habits of their colonies. Under the right conditions, a few types of these cyanobacteria can produce toxins that are potentially dangerous to some wildlife, and to a much lesser extent, humans. The University of Vermont study was conducted to learn more about the dynamics of these bacteria, determine exactly which species are present, and find out which of these produce toxins, and under which conditions. The study was also designed to determine if these toxins were at all present in the drinking water supplies from the Lake. The detailed results from this study are expected soon; it did find that the cyanobacteria that are capable of producing toxins were regularly present, and that trace amounts of the toxins they produce were occasionally found. This year, the study will be continuing with additional funding, and it will focus on the Burlington Bay area.

For More Information

This column presents a sampling of what's new in the Lake Champlain Basin Program. For more information, visit the Program's website at www.lcbp.org, or give them a call (802) 372-3213, or toll free in VT and NY at (800) 468-5227. You can also contact EPA's Lake Champlain Coordinator, Erik Beck, at (617) 918-1606.

DEC Releases TMDL for Phosphorus in Lake Champlain

Vermont DEC released the Vermont portion of the Lake Champlain Phosphorus TMDL for public discussion on June 22, 2001. Building on the 1996 basin plan *Opportunities for Action*, the TMDL is the next step in the refinement of the phosphorus reduction plan for the lake. The TMDL establishes phosphorus loading limits for each municipal and industrial wastewater discharge. The TMDL allocates nonpoint source phosphorus loads to three major land use categories: forest, agriculture and urban. Several allocation alternatives are presented in the draft TMDL, representing different balances between point and nonpoint source reductions. The TMDL also includes a discussion of how the plan will be implemented and how monitoring will be used to track progress in meeting the load allocations. To hear concerns and guide revisions to the draft, the VT DEC scheduled a series of meetings in August and September with stakeholder groups, including municipalities and other discharge permit holders, agricultural groups, and environmental groups. The full text of the draft TMDL, a four page TMDL Fact Sheet, and a summary of public comments will be posted on VT DEC's Water Quality Division website, located at: http://www.vtwaterquality.org/lakes.htm.

Lake Champlain. Photo: Erik Beck

Lake Champlain Basin Program and EPA

The U.S. Government, through EPA and other federal agencies, provides the Lake Champlain Basin Program with funds in a variety of ways. The state governments of New York and Vermont, as well as the provincial government of Quebec, also provide funding for work identified in the Lake Champlain Basin Program's management plan Opportunities for Action. EPA directly funds the operations of the Lake Champlain Basin Program, through its Steering Committee. This body is comprised of top-level environmental officials representing state and provincial government in Vermont, New York, and Quebec; local government representatives; the Citizen Advisory Committee Chairs; the Technical Advisory Committee Chair; and three federal agency representatives. The Lake Champlain Basin Program is a multilateral partnership among local citizens and organizations, state and provincial governments, and federal agencies.

School Clean-Out Project

Vermont DEC's School Science Lab and Mercury Clean-Out Project was completed this spring. A total of 83 high schools and middle schools were cleaned out of unwanted hazardous chemicals and mercury. Over 600 pounds of mercury-containing wastes were removed and over 16,000 pounds of hazardous lab chemicals and materials. "These school science labs are now virtually mercury-free and their inventories of dangerous, toxic chemicals is significantly reduced," according to Tom Benoit, project coordinator at DEC."

The Chittenden Solid Waste District worked closely with DEC and assisted in the removal, transport and disposal of hazardous chemicals from these schools. The Association of Vermont Recyclers assisted in the series of two workshops that each school attended to learn about proper chemical management issues such as reduced purchasing and use of chemicals, proper handling, storage and disposal. Participating schools paid a nominal participation fee for the program, and all disposal costs were paid by the program. Schools were also required to develop Lab Chemical Management Plans as part of the project to assure proper chemical management in the future. "The great success of this program was due largely to the great team effort," said Benoit.

Environmental Management Systems Training

Utilizing EPA grant funds, Vermont DEC's Environmental Assistance Division (EAD) is providing training and assistance to six Vermont manufacturers for the design and implementation of an environmental management system (EMS). EMS began in 1996 as a voluntary international standard (ISO 14000) for improving a business organization's environmental perform through policies, procedures, and plans of action to minimize environmental impacts, prevent pollution and assure compliance with environmental laws and regulations. The participants include: Champlain Cable of Colchester, General Dynamics of Burlington, Greenfield Industries of Lyndonville, Green Mountain Coffee Roasters of Waterbury, Lydall-Westex of St. Johnsbury, and OMYA of Florence.

EAD has contracted with a training consultant to provide six half-day training workshops and several on-site consultations with each business to assist them with EMS design. "EMS are being adopted by some forward thinking companies that wish to go beyond what they are required to do through environmental regulations," according to Gary Gulka, project coordinator in DEC. It brings a focus on preventing pollution and adopting sustainable manufacturing methods. We should be and are supporting these voluntary efforts by businesses." It is hoped that participants will complete their EMS design by next June.

Wood Furniture Manufacturing Regulations to Control Air Emissions

Under the 1990 Clean Air Act Amendments, Congress instructed EPA to set air toxics standards for specific industrial source categories. The standards require maximum achievable control technology (MACT) based on the emissions levels already achieved by the best performing similar facilities. A state agency may implement the federal standards as they are written or develop a more stringent regulation to replace the federal MACT standard after EPA approves the regulation.

In December 1995, EPA issued a federal MACT standard to control toxic air pollutants from major wood furniture manufacturing facilities including cabinet shops and facilities that make residential or industrial furniture. Toxic air pollutants, including toluene, xylene, methanol, and formaldehyde, are released from these facilities during finishing, gluing and cleaning operations. EPA's rule limits the amount of hazardous air pollutants or air toxics that can be contained in the coatings used for these operations. The rule also imposes work practice standards such as keeping containers closed, training workers, and periodically inspecting equipment to find and repair leaks.

Vermont Agency of Natural Resources (VT ANR) is currently developing a regulation to control air toxics and volatile organic compounds (VOCs) from wood furniture manufacturing facilities. Once VT ANR's regulation is final, the state plans to request approval from EPA to substitute its regulation for the federal wood furniture MACT standard. VT ANR's regulation will require the same limits on hazardous air pollutants in coatings as the federal MACT rule, as well as the same work practice standards. However, Vermont wood furniture manufacturing sources must also comply with the state's general hazardous air contaminant regulation which could impose additional emission reduction measures. EPA will approve Vermont's rule in place of the federal rule after Vermont demonstrates that its rule is no less stringent than the MACT standard. Vermont expects to propose its regulation in August and allow an opportunity for the public to comment on the regulation. For more information about this, contact Susan Lancey of EPA New England at (617) 918-1656.

EPA's Environmental Merit Awards

In 2001, we are celebrating 31 years of recognizing New Englanders for their outstanding contributions on behalf of New England's environment. Established in 1970, recognition has been given to scientists, teachers, journalists, citizen activists, young people, organizations, business representatives, public officials, and others committed to preserving and nurturing our natural surroundings. The following are this year's recipients from Vermont:

Dean Suagee of South Royalton

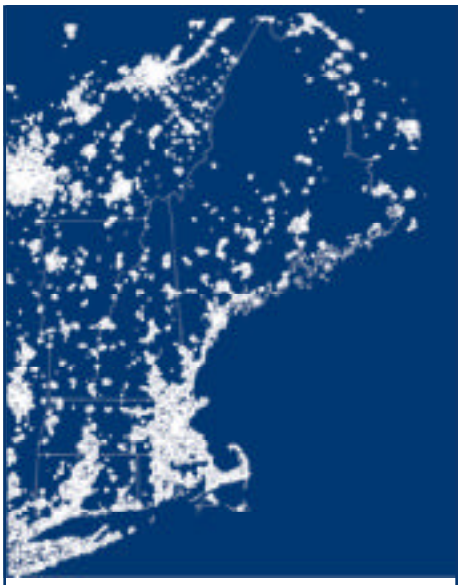
Dean Suagee launched the Indian Country Environmental Justice Clinic at the Vermont Law School and has been a leader in fostering educational opportunities for American Indian students interested in environmental careers through the law school's First Nations Environmental Law Program. The clinic, launched in 1999, offers clinical legal education to students who can then help tribal governments and inter-tribal organizations develop and carry out environmental protection programs. Students in the clinic have drafted environmental codes and advised tribal leaders of tribal rights and opportunities under federal environmental laws. Dean has also written papers describing the clinic so it can serve as a model for the creation of other clinics. The First Nations Environmental Law Program has also flourished since Dean took over its leadership in 1998. Thanks to Dean's work, there is a new wave of lawyers and environmental professionals helping American tribes and nations protect the environment.

Vermont Forum on Sprawl in Burlington

The Vermont Forum on Sprawl was founded in 1998 in response to the growing need to address the challenge of sprawl in Vermont. The group's fundamental mission was to preserve Vermont's unique working landscape and quality of life while encouraging economic vitality in community centers. Last year, the group achieved numerous accomplishments: initiated and secured passage of Senate Bill 317, key legislation creating a Development Cabinet to coordinate state public investments to promote smart growth; developed legislation with the Downtown Coalition and the Dean administration to provide incentives for downtown and village development; participated in the reshaping of state water and sewer grant and loan programs that can impact sprawl; and, with the Orton Institute, developed and conducted eight statewide citizen planner training sessions on how to reinforce traditional settlement patterns in Vermont. In just a short time, the forum has had a huge impact tackling the enormous sprawl challenge.

IBM Corporation in Essex Junction

IBM's Burlington Semiconductor Manufacturing facility in Essex Junction, VT has long been active in pollution prevention and innovative environmental management practices. The facility was one of the first in New England to achieve ISO 14001 certification for its processes. While 80 to 90 percent of the programs required to satisfy the ISO criteria were in place before the standard was written, certification under ISO 14001 has heightened operational controls. Among the end results: facility-wide emissions are now down to less than 1.5 percent compared to the amount of chemicals used by the facility. The IBM facility has actively partnered with the state of Vermont and EPA-NE through EPA's XL and National Environmental Achievement Track (NEAT) programs. Two projects have been completed under Project XL to allow better management of RCRA hazardous wastes. The most recent project, completed last August, has paved the way for possible use of wastewater treatment sludge as a raw material in making cement.



Sprawl as shown by prevalence of city lights at night

EPA New England also gave the late Donella Meadows of Hartland Four Corners, VT, a special recognition award for being one of the great environmental authors and leaders of our day. Meadows, who taught at Dartmouth College and died this year, in 1972 co-authored "The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind," a publication based on computer modeling that concluded the earth would reach its limits of growth within 100 years. More recently, she co-authored a book that pointed the way to a more sustainable future called "Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future."

Environmentalists Named to Dean's Advisory Group

In April of 2001, two environmentalists were appointed to fill vacancies on Gov. Howard Dean's 20-member environmental council.

The two appointees are Ralph Montefusco of the Sierra Club and Thomas Gray of American Wind Energy Association. They will replace Elizabeth Courtney and Mark Sinclair. Courtney was asked to step down due to her criticism of Dean's proposal for a coal-fired power plant in Vermont, and Sinclair refused to serve on the council if she was not reinstated.

Underground Storage Tank News

Workshops on Underground Storage Tank Operational Compliance

The Vermont Department of Environmental Conservation Underground Storage Tank (UST) Program recently held compliance workshops around the state for owners and operators of UST systems that store petroleum and hazardous materials (gasoline, fuel oil, diesel fuel, waste oil, etc.). The purpose of the workshops was to focus specifically on monitoring UST systems, and on the operation and maintenance of these systems.

Federal and state regulations required UST owners and operators to upgrade, close, or replace all substandard USTs by December 22, 1998. Vermont's success rate with this requirement is just about 100%. But despite previous successes, there is still evidence of leaks from UST systems. Vermont regulations require monitoring of possible leaks in tank systems on a weekly basis, and proper operation and maintenance of monitoring equipment and other UST system components. State inspections had revealed that many tank systems either were not being monitored for leaks or were being monitored inadequately, and that some new or upgraded tank systems were not performing as well as had been expected. Inspectors found that tank owners may have the required equipment installed, but may not be using the equipment correctly. Many owners assumed that once they installed certain equipment, they could just sit back and let the equipment take care of things, essentially placing their tank systems on "autopilot." For many of these UST facilities, the routine release detection monitoring and routine operation and maintenance activities were done sporadically, if at all. Unfortunately, this lack of attention can have disastrous consequences for Vermont's environment if tank systems leak and contaminate soil and groundwater. The state decided extra outreach was in order. With funding assistance from EPA New England, the UST Program developed and presented workshops which stressed tank system requirements and good tank management practices.

The workshops were held in five towns between May 24th -June 7th. Topics included:

- Requirements for release detection - how to do it right, how to recognize when something could go wrong with the system;
- Corrosion protection - what it is, why it's important, and how to monitor for it;
- Requirements for spill and overfill protection - routine maintenance;
- What "operational compliance" is and why it's important;
- What to expect during a compliance inspection.

The Vermont DEC and the US EPA will be doing more inspections this year that are focusing on compliance with operation and maintenance requirements. If any tank owners or operators missed the workshops, they should look for the DEC's new manual, *Operating and Maintaining Underground Storage Tank Systems*, soon to be released.

For more information on Vermont UST issues, please contact the Vermont UST Program at (802) 241-3888.

New Reimbursement Program for Leaking Underground Storage Tank (LUST) Cleanups

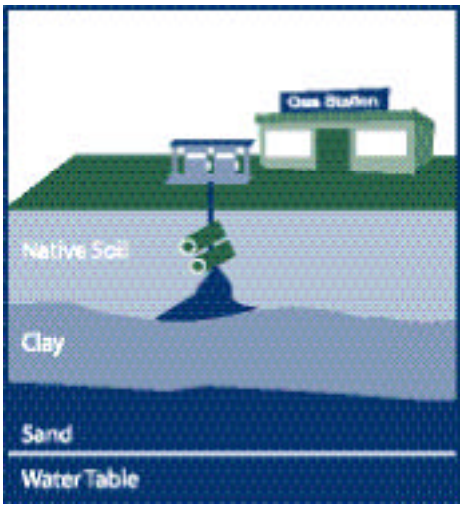
Vermont has over 2300 sites contaminated by petroleum underground storage tanks, many of which are undergoing active cleanups. Much of the cleanup costs are reimbursed to site owners by the state Petroleum Cleanup Fund (the Fund), after the owner pays a deductible. For many tank owners who cannot afford private insurance, the Fund provides a financial assurance mechanism in the event of a release into the environment. Revenues for the Fund comes from an annual tank assessment fee, and a "distributor licensing fee" of one cent per gallon of motor fuel sold in the state.

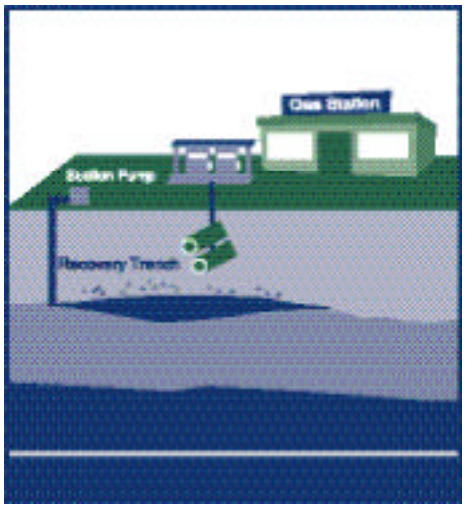
When a LUST site needs to be cleaned up, owners typically hire contractors to do the required work, and traditionally the cleanups are paid for under a time-and-materials type arrangement, an open-ended contract in which the contractor gets paid for time spent on the project and materials used. The cleanup price is not certain and can increase over time, due to frequent change orders. These changes often delay the start-up of site work and stretch out the time it takes to perform the cleanup, thereby increasing the overall costs of the project. Many states struggle with controlling the costs of LUST site cleanups and with protecting their state funds from bankruptcy. They focus on scrutinizing every detail in pursuit of better cleanups at better prices, but all this effort often has just the opposite effect. Reimbursement payments to contractors can be slowed while invoices are checked against work plans and other paperwork. Delays in reimbursement increase the contractors' cost of doing business and encourage business practices that increase costs even further. Backlogs of paying for the cleanup work and delays in achieving cleanup goals are often a direct result of the nature of time-and-materials contracts. In an effort to control Fund costs and to close sites out faster, Vermont DEC decided to try an innovative form of reimbursement called **pay-for-performance (PFP)**, with which other states have had success.

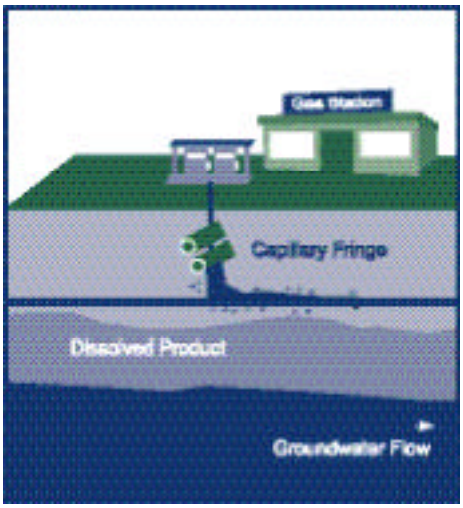
To assist states in limiting cleanup costs, EPA'S Office of Underground Storage Tanks developed a guide to performance-based cleanup contracting as an alternative to traditional time-and-materials cleanup contracts. Performance-based contracts have the following features: 1) they set a contamination-level goal and a fixed price, in advance, for cleaning up an UST release; and 2) the contractor is paid as the contamination at a site declines to specified levels (milestones) toward the set goal; if that goal is not reached, the contractor does not get full payment. Payments are structured so that there is no incentive for the contractor to abandon incomplete cleanups, yet the contracts include reasonable escape clauses. Payment schedules contain contamination-reduction milestones, and the contractor gets paid each time a milestone is reached. The sooner a milestone is achieved, the sooner the contractor gets paid, which yields more profit for the contractor. The result is getting sites cleaned up faster at lower costs.

Some sites may not be a good fit with PFP- type agreements; for example, sites that are high risk, are hydrogeologically complicated, have a complex set of contaminants, or require emergency responses. But petroleum-contaminated sites generally have similar constituents, and a small set of cleanup technologies from which to choose. So they lend themselves quite well to performance-based contracting. The goal is to make this the normal way of doing business. After overcoming a few obstacles, such as convincing contractors and internal managers that this method is worth trying, the Department of Environmental Conservation was successful in negotiating several PFP contracts in1999. It currently has 10 LUST sites using pay-for-performance, with others under negotiation, and it is hoping that more cleanup contracts will move towards PFP. Their success over time will show that paying for performance encourages fast, efficient, competitively-priced cleanups.

For more information on pay-for-performance contracting, please contact the Vermont LUST Program at (802) 241-3888. To see a PFP model contract, visit the Vermont DEC website at: http://www.anr.state.vt.us/dec/wastediv/sms/sites_management_section.htm







EPA Adds Vermont Sites to Superfund List

This past June, the U.S. Environmental Protection Agency (EPA) added the Ely and Elizabeth Mines to the National Priorities List (NPL), commonly known as the "Superfund List." The National Priorities List is EPA's list of the country's most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term cleanup. Adding a site to the Superfund List establishes that EPA will oversee and manage cleanup of the site, and makes federal funds available when private financing is unavailable.

The addition of both of these abandoned copper mines in Vermont marks a large step forward in their cleanup process. The use of federal resources will ensure safer and more complete cleanup of the sites. The support of the Superfund program rewards the tremendous efforts of state and community organizations on the cleanup of these areas.

There is much support for this action: Ira Leighton, acting regional administrator for EPA's New England office commented, "The state of Vermont has done a good job of working with the community to make sure there's support for this proposal, by adding Ely Mine to the Superfund list, we can put federal resources to work cleaning it up."

U.S. Senator Patrick Leahy confirms the significance of this action: "I know how actively involved the local community has been in the decision-making process for the Elizabeth Mine site. I am pleased to see the site become a model for how the EPA works with, and listens to, communities facing the challenges of mine site restoration."

For more information, contact EPA's Ed Hathaway at (617) 918-1372, or Bill Lovely at (617) 918-1240.

Vermont Hospitals Recognized by EPA For Mercury Reducation Efforts

On April 19, 2001 the U.S. Environmental Protection Agency recognized 47 New England hospitals - including three in Vermont - for their successful efforts over the past year in reducing their use of mercury, a toxic pollutant that is pervasive in water bodies and freshwater fish all across New England.

The 47 health-care facilities were honored at a news conference at Hartford Hospital as part of EPA's "Partners for Change" Mercury Challenge Program. This year's 47 participants represent more than a three-fold increase from last year's 13 facilities. The Partners for Change Mercury Challenge is designed to promote voluntary, measurable mercury reductions at medical facilities. Over the last two years, participants have eliminated more than 1,120 pounds of mercury from their waste streams by replacing mercury-containing equipment such as thermometers and sphygmometers (which measure blood pressure), recycling and/or replacing high mercury flourescent bulbs with lower mercury bulbs, reducing use of mercury-containing laboratory chemicals and educating staff on mercury reduction techniques. Mercury exposure can lead to irreversible neurological effects, including learning disabilities and delayed motor skill development, particularly in young children. In New England, 83 percent of waterbodies are so polluted with mercury that residents must limit their consumption of freshwater fish caught in them. Waterbodies are polluted with mercury easily because as little as one gram of mercury per year can contaminate all the fish in a lake with a surface area of 20 acres.

Queche Gorge. Photo by Barbara McGonagle

The three Vermont hospitals recognized are:

North County Hospital in Newport

was recognized for its mercury reduction plan to phase out mercury thermometers and sphogmometers over the next two years. In 1999, the hospital replaced its mercury-filled esophageal dilators, while the hospital has been replacing mercury thermometers and batteries over the last several decades.

Porter Medical Center in Middlebury

was recognized for replacing mercury-containing gastrointestinal tubes, educating staff regarding mercury, working with its purchasing department to review products for mercury content, working with construction contractors for mercury awareness and continuing its fluorescent light bulb recycling program. These accomplishments built on last year's elimination of mercury-containing sphygmometers and 98% of mercury thermometers.

VA Medical Center in White River Junction

was recognized for eliminating mercury thermometers in most usage areas. Over the past three years, this facility has become 95% mercury free.

For more information on how to reduce mercury at a medical facility, call 1-888-372-7341. Request the "Mercury Challenge environmental pocketbook," a resource guide with useful tips on mercury reduction, as well as phone, e-mail and internet listings of EPA help line or access our Mercury Challenge website at http://www.epa.gov/region1/steward/neeat/mercury/.

Statewide Mercury Thermometer Exchange

Vermont DEC completed a highly successful two-week statewide mercury fever thermometer exchange conducted through pharmacies in the state. About 15 percent of households participated, 33,000 digital thermometers were distributed, 45,000 mercury thermometers were collected and 95 pounds of total mercury was removed from households. A total of 111 pharmacies out of 119 in the state participated in the exchange. All of these pharmacies voluntarily pledged to discontinue the sale of mercury fever thermometers. "Not only did we remove a lot of mercury from homes in Vermont, but the project served as a great tool for educating Vermonters on the hazards of mercury in our environment and the concerns with elevated levels of mercury in some fish," according to Karen Busshart, Mercury Project Coordinator in DEC.

New Phase II Storm Water Rule

The U.S. Environmental Protection Agency has expanded it's storm water program to now include smaller communities, smaller construction projects, major wastewater treatment facilities and all communities' vehicle maintenance practices. The new requirements, called the Storm Water Phase II rule, are the next steps in EPA's efforts to protect waterways from polluted storm water runoff.

Since 1990, Phase I of the program has used permits issued under the National Pollutant Discharge Elimination System (NPDES) to control storm water run off from: municipalities serving populations of 100,000 or more; construction activity disturbing 5 acres of land or greater; and, 10 categories of industrial activity.

Phase II of the program, enacted in October 1999, will now cover:

- municipalities in "urbanized areas" with populations under 100,000;
- construction activity disturbing 1 acre of land or greater;
- publicly owned wastewater treatment plants treating 1 million gallons per day or more and,
- all communities' vehicle maintenance practices.

Phase II affects municipalities in three basic ways, as shown in the chart below. In general, the deadline for obtaining permit coverage for each in March 2003. To avoid permitting, municipal "industrial" facilities must submit a Conditional No Exposure Exclusion certification by March 2003.

Phase II Outreach

Due to the large number of new parties and operations regulated, EPA New England is planning extensive outreach in partnership with the states and a variety of organizations. EPA New England, MA DEP and other sponsors collaborated on a large conference/ technology trade show that took place Dec. 4, 2000 in Sturbridge, MA. This conference, which provided an overview of Phase II, attracted about 300 participants. Smaller, more localized events geared at different aspects of and audiences for Phase II are planned. To express interests in these events, please e-mail or call one of us. To find out more about Phase II requirements now, consult the EPA Headquarters Storm Water Phase II web site: www.epa.gov/npdes/. Or contact Thelma Murphy of EPA NE at 617-918-1615.

Effects of Phase 2

1. Small Municipal Separate Storm Sewer Systems

Under Phase II, communities in urbanized areas, including institutions (such as public universities, prisons, and state highway facilities) which have separate storm sewer systems, will be regulated. To comply, they will have to develop comprehensive storm water management programs, including:

- educating and involving the public;
- finding and removing illicit connections.
- controlling runoff from construction sites during and after construction.
- preventing storm water pollution at municipal operations.

2. Municipal Industrial Facilities

Municipal "industrial" facilities include municipal highway garages, other municipally-run vehicle maintenance operations, and wastewater treatment facilities that treat at least 1 million gallons per day or have an approved pretreatment program.

Any industrial activity which is owned/operated by a municipal which meets the definition of industrial activity in the storm water regulations will be subject to permitting. The following industrial activities were subject to permitting under Phase I; landfills, power plants and airports.

All municipal industrial activities, even those not located in urbanized areas, will need to obtain general permit coverage by March 2003 or secure an exemption. To qualify for an exemp-

3. Construction Projects

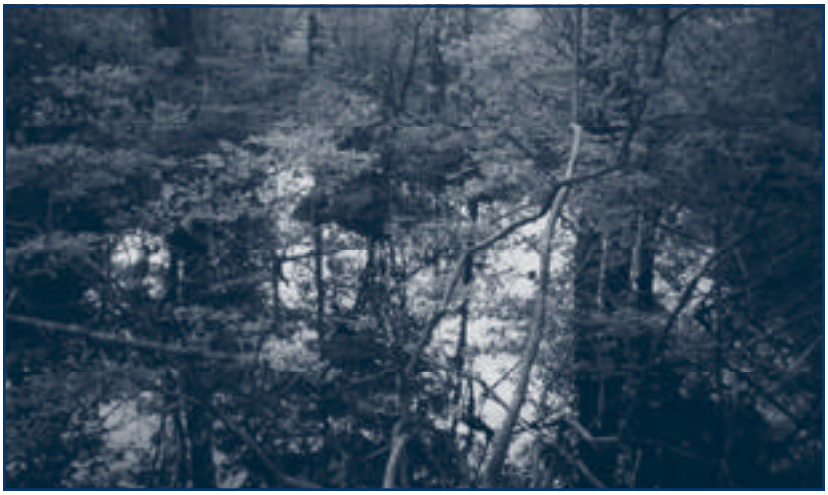
Under Phase II, the federal threshold for construction projects subject to storm water runoff control dropped from those that disturb five acres or more to those that disturb one acre or more. This means that many more construction projects, whether performed by municipalities themselves (e.g., road reconstruction) or contractors/developers permitted by municipalities (e.g., housing construction), will be subject to storm water management requirements.

Wetlands

Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.

Section 404 of the Clean Water Act: An Overview

In 1972, when the Clean Water Act and Section 404 was born, few recognized the significance of Section 404, which regulates the discharge of dredged or fill material into "the waters of the United States," and thus affects a wide array of construction activities in a range of aquatic habitats. The US Senate and House agreed that the EPA and the Army Corps of Engineers should each have a role in the new program but differed over which government agency should have primacy. In the end, they decided that the Corps would administer the program on a day-to-day basis but would be bound by



environmental regulations known as the "404 guidelines" which EPA developed. EPA also retained the right to veto a Corps' decision to grant a permit if the project would have an unacceptably adverse impact on the environment. The agencies share enforcement authority (more information is available in an article by Douglas A. Thompson and Thomas G. Yocum; "Uncertain Ground", Technology Review, August/September 1993, page 20).

What does Section 404 Require?

The basic premise of the program is that no discharge of fill can be allowed if an alternative exists that is less damaging to the aquatic ecosystem or if the fill would significantly degrade our nation's waters. In other words, when you apply for a permit, you must show that you have taken steps to avoid wetland impacts where practicable alternatives exist, minimized those impacts, and provide compensation for any remaining, unavoidable impacts through wetland restoration or creation. Regulated activities are controlled by a permit review process. An individual permit is usually required for projects with more significant impacts. However, for most discharges that will have only minimal adverse effects, the Army Corps of Engineers will grant general permits. These may be issued on a nationwide, regional, or state basis for many categories of activities (for example, minor road crossings, utility line backfill, and bedding) as a means to expedite the permitting process.

Agricultural Activities and 404

The USDA Natural Resources Conservation Service (NRCS) is the lead federal agency responsible for wetland delineations on agricultural land for both Swampbuster and CWA Section 404. The NRCS conservationists advise people how to comply with federal laws and regulations.

The Wetland Conservation provision (Swampbuster) of the 1985 and 1990 farm bills requires agricultural producers to protect the wetlands on their farms to remain eligible for USDA farm program benefits. Producers can lose their eligibility if they plant an agricultural commodity on a converted wetland that was converted by drainage leveling or any other means after December 23, 1985, or convert a wetland for the purpose of making an agricultural commodity production possible after November 28, 1990. Generally areas subject to regulation under Swampbuster and CWA Section 404 are the same, but there are

Epa Contacts

For general information, customer assistance, to report a tip or complaint about a potential environmental violation or to request assistance from the New England Environmental Assistance Team:

Customer Assistance Line:
(888)EPA-REG1(888-372-7341)

Emergency Response:
(for reporting spills/environmental incidents):
(800)424-8802

Criminal Investigation Division (24 hours):
(617)918-2300

EPA New England Library
(888)EPA-LIBR(888-372-5427)

EPA New England Web Site:
http://www.epa.gov/region1

Wetlands

Photo: Steve Delany

some differences and landowners are often advised to contact both the NRCS and the ACOE for guidance on this matter.

Prior converted croplands are not regulated under Swampbuster or Section 404. Prior converted croplands (PC) are wetlands that were drained, dredged, filled, leveled or otherwise manipulated this includes the removal of woody vegetation before December 23, 1985, to make production of an agricultural commodity possible and that: (1) do not meet specific hydrologic criteria; (2) have had an agricultural commodity planted or produced at least once prior to December 23, 1985; (3) have not since been abandoned.

If a PC cropland is not planted to an agricultural commodity for more than five consecutive years and becomes a wetland, the cropland is considered abandoned and the land becomes subject to regulation under Swampbuster and Section 404. Farmed wetlands are similar to prior converted cropland in that they were drained, dredged, filled, leveled or otherwise manipulated before December 23, 1985 to make production of an agricultural commodity possible, but are often wet enough to still be valuable wetland habitat subject to Swampbuster and CWA Section 404. Section 404 exempts a number of farming activities from regulation including established (i.e., ongoing) normal farming activities and maintenance but not construction of drainage ditches, farm ponds and farm roads.

The Vermont Agency of Natural Resources also regulates agricultural activities in wetlands. Whenever possible the State and federal agencies integrate the permit reviews to eliminate confusion and expedite the permit process, however the state and federal wetland programs are not the same. In Vermont wetland rules were adopted to identify and protect Vermont's "significant wetlands". The determination of whether any specific wetland is "significant" is based on an evaluation of the extent that it serves one or more of the 10 functions listed in the Act. These functions include, fish, wildlife and migratory bird habitat, water quality treatment, storm and flood water storage and erosion control, rare, threatened and endangered species habitat, and hydrophytic vegetation habitat.

Wetlands are classified into three categories by the Vermont Wetland Rules. Class I and II wetlands are protected under the rules. Class I wetlands are exceptional or irreplaceable and merit the highest level of protection. Class II wetlands are those shown on or contiguous to wetlands on the National Wetlands Inventory maps. A 50-foot buffer zone is designated adjacent to all Class II wetlands. Class III wetlands are either considered not significant for producing any wetland functions when last evaluated or have not been mapped on the NWI maps. Class III wetlands are not protected under the rules, however they are protected under other local, state and federal laws.

The rules contain a list of activities that are allowed within significant wetlands and their adjacent buffer zones without review under the rules, provided there is no draining, dredging, filling, grading or alteration of the water flow. Activities include, Recreation, Routine Repair and Maintenance of structures and facilities, Pond Maintenance, Logging and Farming.

For additional information about the federal and state wetland programs contact Martha Abair, ACOE VT Project Office at 802-872-2893, Beth Alafat of EPA at 617-918-1399, the VT USDA Natural Resource Conservation Service at 802-951-6327, the VT wetlands office at (802) 241-3770. Additional information can also be found at the following websites: www.spk.usace.army.mil (ACOE), www.epa.gov/OWOW/, and www.anr.state.vt.us.

People Corner

Lee Steppacher, longtime Lake Champlain Coordinator and more recently the Drinking Sourcewater Coordinator for the Vermont Unit, has left EPA to take a position with the National Park Service. In her new job, Lee will be working in the Wild and Scenic program for the recently designated Concord, Assabet, and Sudbury Rivers.

Barbara McGonagle, UIC Coordinator and Outreach Specialist, has moved from the Vermont Unit to the Drinking Water Unit. In her new position, she will be devoting more time to outreach and education on drinking water issues.

Glenda Velez joined the Vermont Unit as a student intern this spring. She is enrolled as a junior at Chelsea High School near Boston, and will be working for EPA full time through the summer and part-time this fall.

Lillian Frank, the Vermont Unit's administrative assistant, has left to take another position within EPA New England. She will be providing support to the air pollution control branch.

Awards

The City of Rutland's wastewater treatment facility has won an award from EPA's National Wastewater Management Excellence program for 2001. This award is for excellence in operations and maintenance for medium-sized facilities with advanced treatment. The award was presented October 15 at the Annual Water Environment Federation Conference in Atlanta, Georgia.

The Troy/Jay wastewater treatment facility has won an award from EPA's National Wastewater Management Excellence program for 2001. This award is for excellence in operations and maintenance for small facilities with secondary treatment. The award was presented October 15 at the Annual Water Environment Federation Conference in Atlanta, Georgia.

US EPA New England's Organization at a Glance

Office of the Regional Administrator

Leads EPA efforts to ensure clean air, water and land.

Robert Varney, Regional Administrator ..... *(617) 918-1012*
Ira Leighton, Deputy Regional Administrator ..... *(617) 918-1011*

Office of Ecosystem Protection

Implementation of Surface & Ground Water, Drinking Water, Air, Pesticides, Toxics, Hazardous Waste and State Financial Assistance Programs

Linda Murphy, Director ..... *(617) 918-1500*

Office of Regional Counsel

General Legal Support.

Carl Dierker, Regional Counsel ..... *(617) 918-1090*

Office of Site Remediation and Restoration

Brownfields Restoration, Hazardous Waste and Superfund Cleanup

Patricia Meany, Director ..... *(617) 918-1200*

Office of Environmental Stewardship

Pollution Prevention, Compliance, and Enforcement.

Sam Silverman, Acting Director ..... *(617) 918-1730*

Office of Administration and Resource Management

Administration of grants, human resources, finances, and information technology.

Stephen Perkins, Director ..... *(617) 918-1900*

Office of Environmental Measurement and Evaluation

Laboratory Services, Field Sampling, and Quality Assurance.

Don Porteous, Acting Director ..... *(617) 918-8317*

EPA- New England Consumer Assistance for all EPA programs

Customer Call Center ..... *(617) 918-1111* or *(888) 372-7341*
Web Site http://www.epa.gov/region1

Vermont State Program Unit

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beck.erik@epa.gov	Lake Champlain Basin Program	(617) 918-1606
ciccarelli.anthony@epa.gov	Water Supply/Drinking Water	(617) 918-1609
perkins.eric@epa.gov	Non-Point Source	(617) 918-1602
velez.glenda@epa.gov	Student Intern	(617) 918-1677

Technical Support is Provided to the Vermont State Unit by:

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leclair.jackie@epa.gov	Drinking Water SRF	(617) 918-1549
leitch.sharon@epa.gov	Hazardous Waste	(617) 918-1647
burke.daniel@epa.gov	CT River Navigator	(413) 548-9420
greene.cynthia@epa.gov	Climate Change	(617) 918-1813
rota.ken@epa.gov	Enforcement/Compliance	(617) 918-1751
lord.james@epa.gov	Clean Water SRF	(617) 918-1617
odonnell.mayjane@epa.gov	Superfund	(617) 918-1371

Fax Number ..... (617) 918-1505

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